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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,160	12/29/2000	Merle L. Miller	2069.008400	8960
23720 7590 11/15/2007 WILLIAMS, MORGAN & AMERSON 10333 RICHMOND, SUITE 1100 HOUSTON, TX 77042			EXAMINER SINGH, RAMNANDAN P	
			ART UNIT 2614	PAPER NUMBER
			MAIL DATE 11/15/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<div style="border: 1px solid black; width: 150px; height: 20px; margin: 0 auto;"></div> <b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/752,160	MILLER ET AL.	
	Examiner	Art Unit	
	Ramnandan Singh	2614	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Aug 16, 2007 & May 02, 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 and 20-25 is/are pending in the application.
- 4a) Of the above claim(s) 1-4, 16-18, 24 and 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-15 and 20-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35

U.S.C. 121:

I. Claims 1-4, 24-25, drawn to a method for DC feed control, classified in class 379, subclass 387.02.

II. Claims 5-15, 20-23, drawn to an apparatus, classified in class 379, subclass 413, subclass 399.01.

III. Claims 16-18, drawn to an apparatus, classified in class 379, subclass 286.

2. Applicant's response filed on Aug 16, 2007 confirmed the election of Group II consisting of claims 5-15 and 20-23. As a result, claims 1-4, 16-18 and 24-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention. Hence, this restriction is made FINAL.

***Claim Objections***

3. Claims 5-15 and 20-23 are objected to because of the following informalities:

Claim 5 recites "A method for DC feed control" in line 1. The use of an acronym, such as "DC", in a claim is improper. Spell out the full word for "DC". Claims 6-15 and claims 20-23 are also objected for the similar reasons.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 5-8, 12-15, 20-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear whether Applicants are claiming an "apparatus" comprising a digital signal processor and a circuitry for applying the loop voltage or a "method" comprising the steps of determining if the line card...,

and determining a loop voltage...in claim 1. A similar thing holds for claims 13 and 20. Claims 14-15 being dependent from claim 13 and claims 21-22 being dependent from claim 20 are also indefinite.

Further, claim 12 recites the limitations "the line card" in line 3 and "the subscriber line" in line 7. There are insufficient antecedent bases for these limitations in the claim.

Claim 20 recites the limitation "the subscriber line" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim.

Claim 23 recites the limitations "the current value" in line 5 and "the subscriber line" in line 8. There are insufficient antecedent bases for these limitations in the claim.

Claim 5 recites the limitation "the subscriber line" in 5. There is insufficient antecedent basis for this limitation in the claim.

Claims 6-8 being dependent from claim 5 are also indefinite.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 5-15, 12-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhou [US 5,926,544].

Regarding claim 12, Zhou discloses an apparatus (300), as shown in Fig. 3, comprising:

a digital signal processor (DSP) (304) for [Figs. 3, 6-7, 9; col. 3, lines 16-32];

determining if the line card (308) [Figs. 3, 5, 8] is operating in a current limit region of a DC feed curve (408) [Figs. 4, 9; col. 12, line 19 to col. 14, line 12]; and

determining a subscriber loop (302) voltage based on a synthesized curve in the current limit region (410) [Figs. 3-4, 9; col. 4, line 64 to col. 6, line 28; col. 13, lines 18-50]; and

a circuitry [col. 18, lines 27-46] for applying the loop voltage to the subscriber line [Figs. 3-4; col. 5, lines 27-46; col. 12, lines 19-38].

Claims 5, 20 and 23 are essentially similar to claim 12 and are rejected for the reasons stated above.

Claim 9 is essentially similar to claim 12 except for generating a current value proportional to a loop current flowing from a subscriber line. Zhou discloses generating a current value proportional (i.e. piece-wise-linear) to a loop current flowing from the subscriber line [Figs. 3-4; col. 5, lines 27 – 46].

Regarding claim 13, Zhou further discloses the apparatus (300), wherein the digital signal processor for determining if the line card is operating in the current limit region includes the digital signal processor for:

generating a current value proportional (i.e. piece-wise-linear) to a loop current flowing from the subscriber line [Figs. 3-4; col. 5, lines 27 – 46]; and

determining if the line card is operating in the current limit region (410) of the DC feed curve in response to generating the current value [Figs. 3-4; col. 5, line 47 to col. 6, line 28].

Claim 6 is essentially similar to claim 13 and is rejected for the reasons stated above.

Regarding claim 14, Zhou further discloses the apparatus (300), wherein the synthesized curve is based on an anti-saturation region and the current limit region of the DC feed curve (408) [Figs. 3-4; col. 5, lines 47-65].

Regarding claim 15, Zhou further discloses the apparatus (300), wherein the digital signal processor (304) is further for determining the loop voltage in at least one of an anti-saturation region and a resistance feed region in response to determining the line card is not operating in the current limit region [Figs. 3-4; col. 5, lines 27-46; col. 12, lines 19-38; col. 18, lines 45-58].

Claim 21 is essentially similar to claim 15 and is rejected for the reasons stated above.



Regarding claim 7, Zhou discloses a method , wherein determining if the line card is operating in the current limit region of the DC feed curve in response to generating the current value includes determining if the loop current is greater than a first preselected value [Figs 4, 9; col. 12, line 19 to col. 14, line 12].

Regarding claims 8, 10-11, the limitations are shown above.

Regarding claim 22, Zhou discloses the line card , wherein the subscriber line interface circuit is a voltage-feed subscriber line interface circuit (301) [Fig, 3; col. 5, lines 12-26].

### ***Response to Arguments***

8. Applicant's arguments filed May 02, 2007 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Zhou et al [US 5,878,133] disclose a direct current feed control system for a communication system [Whole document].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramnandan Singh whose telephone number is (571) 272-7529. The examiner can normally be reached on M-TH (8:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ramnandan Singh  
Primary Examiner  
Art Unit 2614

A handwritten signature in black ink, appearing to read 'Ramnandan Singh', is written over the printed name and title. The signature is stylized with a large initial 'R' and a long horizontal stroke at the bottom.